



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,237	07/23/2003	Shigeru Taniguchi	JCLA11628	1279
23900	7590	05/17/2005	EXAMINER	
J C PATENTS, INC. 4 VENTURE, SUITE 250 IRVINE, CA 92618			MCDONALD, RODNEY GLENN	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/626,237	<b>Applicant(s)</b> TANIGUCHI ET AL.	
	<b>Examiner</b> Rodney G. McDonald	<b>Art Unit</b> 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claims 2 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 5 are indefinite because it is unclear what elements are incorporated in that Group of elements from the periodic table. (A periodic table from Encyclopedia Britannica is attached. From that Table there appears to be different ways to number the groups. Should the elements be listed in the claims to eliminate any confusion?)

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Lauterbach et al. (U.S. Pat. 4,341,816) (With evidence document The Random House College Dictionary)

Regarding claim 1, Lauterbach et al. teach a target which is composed of non-solderable metallic target materials, such as, for example, aluminum, aluminum/silicon, aluminum/tantalum, tantalum, chromium molybdenum, etc. (Column 2 lines 54-57) The target is bonded to a backing plate 4, which serves as the cooling plate. (Column 3

Art Unit: 1753

lines 50-53) The target is coated with a layer of adhesive material and coated with a solderable layer. The target is soldered to the surface of the cooling back plate.

(Column 1 lines 43-50) The adhesive layer (understood by the examiner to contain the coupling agent) can be composed of a material such as copper/glass mixtures.

(Column 2 lines 58-65) Here the glass in the layer contains silica or silicates, which is understood by the Examiner to be Applicant's required semi-metal oxide coupling agent.

(As evidence that glass is comprised of silica The Random House College Dictionary definition of glass has been provided.)

Regarding claim 4, Lauterbach et al. teach the method of making the target by applying a layer of an adhesive layer onto the target and applying the solder layer onto the adhesive layer on the target. The solder layer is reflowed to bond the target to the cooling plate. (Column 4 lines 4-16; Column 1 lines 40-50; Column 2 line 1) Once again the Examiner understands the coupling agent to be the silica of the glass mixture in the adhesion layer. This is discussed above with respect to claim 1.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

Art Unit: 1753

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterbach et al. (U.S. Pat. 4,341,816) in view of Chiang et al. (U.S. Pat. 6,248,401).

Lauterbach et al. is discussed above and all is as applies above. (See Lauterbach et al. discussed above) (Applies to claims 1 and 4)

The difference between Lauterbach et al. and the present claims is that the coupling agent comprising an oxide of the Group IVa elements of the Periodic Table is not discussed (Claims 2, 5) and the use of a silane coupling agent is not discussed (Claims 3, 6).

Regarding claims 2, 5, Chiang et al. teach that an adhesion promoting layer of a substrate can comprise a variety of titanates. (Column 15 lines 37-47)

Regarding claims 3, 6, Chiang et al. teach that an adhesion promoting layer of a substrate can comprise organofunctional silane coupling agents. (Column 15 lines 53-59)

The motivation for utilizing coupling agents of the Group IVa elements of the Periodic Table and silane coupling agents is that it allows for enhancing the adhesion to an overlying layer of material. (Column 9 lines 34-39)

Art Unit: 1753

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Lauterbach et al. by utilizing coupling agents of the Group IVa elements of the Periodic Table and silane coupling agents as taught by Chiang et al. because it allows for enhancing the adhesion to an overlying layer of material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney G. McDonald  
Primary Examiner  
Art Unit 1753

RM  
May 12, 2005